nubeca

Distributor:

VER:A00

nubeca

Instruction Manual

Digital Blood Pressure Monitor

Fully Automatic Wrist Style

Model No:BW2210

- Thanks for choosing the Digital Blood Pressure Monitor.
- Please read this instruction manual before using your unit.
- Please keep this instruction manual safe for future use.

Table of Contents

Before Using the Monitor

- Introduction 1
- Symbols Use 2
- Important Safety Notes....3
- Konw Your Unit 4-5
- IHB Introduction 6
- Before Taking A Measurement 7

Operating Instructions

- Battery Installation/Replacement 8-9
- Adjusting Settings 10
- Proper Way of Measurement 11
- Take a Measurement 12-13
- Use the Memory Function
  - — To read the average value 14
  - — To read the measurement value 15
  - — To delete the memory value 16
- About Blood Pressure
  - — Blood Circulation 17
  - — Health and Blood Pressure 18
  - — Classification of Blood Pressure 19-20

Table of Contents

Care and Maintenance

- Exceptional Situations
  - — Error Indicators 21
  - — Eliminate Fault 22
- Care and Maintenance
  - — Care 23
  - — Maintenance 24
- Specifications 25-26
- Statement 27
- Warranty Information 28-36

Introduction

- Thank you for purchasing Fully Automatic Wrist Style Digital Blood Pressure Monitor.
- The unit uses the oscillometric method of blood pressure measurement. It means the unit detects the movement of your blood through your brachial artery, and converts your blood pressure into a digital reading. The unit is simple to use because a stethoscope is not needed while using an oscillometric monitor.
- The unit stores automatically 60 sets of measurement values . You can read the stored data conveniently by pressing the memory button.
- The unit comes with the following components:
  - Main Unit
  - Storage Case
  - Instruction Manual printed in English

Symbols Use

SYMBOLS USED IN THIS INSTRUCTION MANUAL	
⚠ WARNING	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ CAUTION	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury to the user or patient or damage to the equipment or other property.
	Type B applied part
EC REP	AUTHORISED REPRESENTATIVE IN THE EUROPEAN COMMUNITY
	Refer to instruction manual/booklet
	MANUFACTURER
SN	SERIAL NUMBER
	The marking of electrical and electronics devices according to Directive 2002/96/EC. The device,accessories and the packaging have to be disposed of waste correctly at the end of the usage. Please follow Local Ordinances or Regulations for disposal.

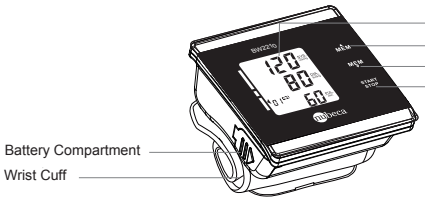
Important Safety Notes

⚠ *To assure the correct use of the product basic safety measures should always be followed including the precautions listed below:*

- Read all information in the instruction manual and any other literature included in the box before using the unit.
- Contact your physician for specific information about your blood pressure. Self-diagnosis and treatment using measured results may be dangerous.Follow the instructions of your healthcare provider.
- Operate the unit only as intended. Don't use for any other purpose.
- The unit is intended to use in measuring blood pressure and pulse rate for adult only, not recommended for neonatal baby at home or medical centre.
- Do not use a cellular phone near the unit. It may result in operational failure.
- Please avoid using in high radiant area in order to make your measuring data correctly.
- Do not disassemble or attempt to repair the unit or components.
- Do not use the equipment where flammable gas (such as anesthetic gas, oxygen or hydrogen) or flammable liquid (such as alcohol) are present.

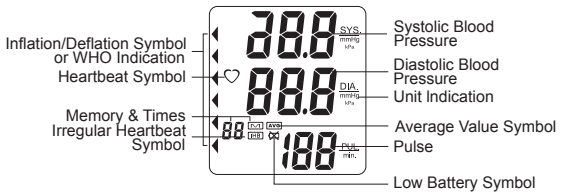
Know Your Unit

Body & Cuff



Know Your Unit

Display



Power

- 2 AAA Alkaline Batteries

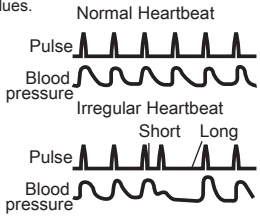
- Storage Case

IHB Introduction

Irregular Heartbeat Symbol (IHB)

When the unit detects an irregular rhythm two or more times during the measurement, the Irregular Heartbeat Symbol will appear on the display with the measurement values.

An irregular heartbeat rhythm is defined as a rhythm that varies by less than 25% from the average rhythm or 25% more than the average rhythm detected while the monitor is measuring the systolic and diastolic blood pressure.



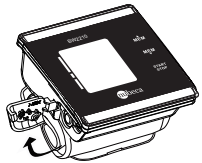
If the Irregular Heartbeat Symbol (IHB) displays with your measurement results, we recommend you consult your physician.
Follow the directions of your doctor.

Before Taking A Measurement

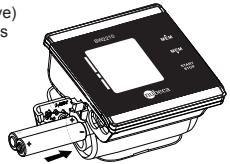
1. Avoid eating,drinking alcohol, smoking, exercising and bathing for 30 minutes before taking a measurement.
2. Stress raises blood pressure.Avoid taking measurements during stressful times.
3. The cuff can be applied to your left or right wrist.Always measure your blood pressure on the same wrist.
4. Measurements should be taken in a quiet place.
5. Position the unit at heart level throughout the measurement.
6. Remain still and do not talk during the measurement.
7. Keep a record of your blood pressure and pulse readings for your physician.A single measurement does not provide an accurate indication of your true blood pressure.You need to take and record several readings over a period of time.Try to measure your blood pressure at the same time each day for consistency.
8. Wait 30~60 seconds between measurements.The wait time allows the arteries to return to the condition prior to taking the blood pressure measurement.You may need to increase the wait time depending on your individual physiological characteristics.

Battery Installation / Replacement

1 Remove the battery cover from the battery compartment.

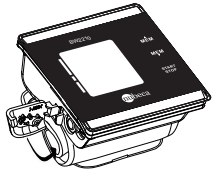


2 Install 2 “AAA” size batteries so the + (positive) and - (negative) polarities match the polarities of the battery compartment as indicated.



Battery Installation / Replacement

3 Replace the battery cover.

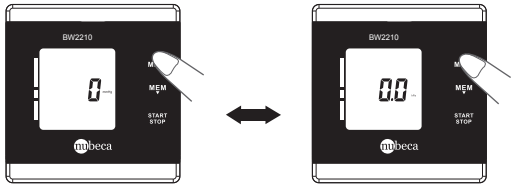


Caution!

- Use two identical 1.5V alkaline batteries type AAA/LR03.
- Do not use rechargeable batteries.
- Replace both of the batteries if the symbol of low battery appears on the display.
- Never leave any low battery in the battery compartment since they may leak and cause damage to the unit.

Adjusting Settings

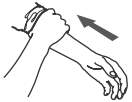
Press the “MEM” down button about 10 seconds unil the units (kPa or mmHg) displayed when the unit turned off.
Then press the “MEM” up button to change the current unit.
Press the “ START/STOP ” button to save the current setting and turn off.



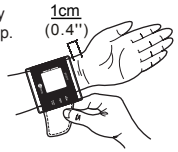
“mmHg” display “kPa” display

Proper Way of Measurement

1 Remove all clothes from your arm allowing the cuff to fit directly on the skin.



2 Wrap the cuff tightly around your wrist by using the Velcro strip.

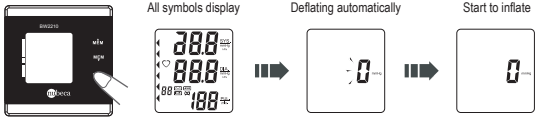


3 Sit in a chair with your feet flat on the floor.

Take a Measurement

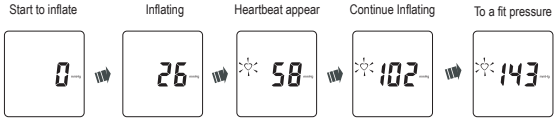
1 Press the “ START/STOP ” button.

All display symbols appear.



2 Measurement starts while inflating.

The hearbeat symbol “♡” flashes once a pulse is detected.



Take a Measurement

3 The blood pressure and pulse rate are displayed when the measurement completed.

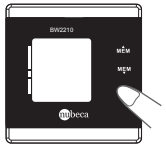
The cuff is deflated automatically, and the measurement results are stored in memory with date and time

The " IHB " symbol will be displayed if irregular heartbeat is deteced.

"kPa"display "mmHg"display "IHB"display

4 Press the " START/STOP " button to turn off the unit.

The unit will automatically turn off after two minutes if you have forgotten to turn it off.



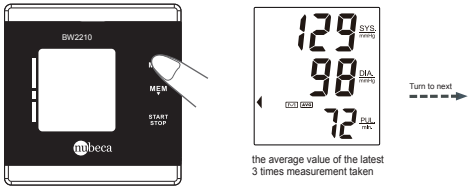
NOTE:
To stop the inflation or measurement, press the "START/STOP" button in anytime. The unit will stop inflating and then release and turn off.

Use the Memory Function

- The unit stores the blood pressure and pulse rate in the memory after completing a measurement every time. It can automatically store 60 sets of measurement values . The oldest record is deleted to save the latest measurement value when more than 60 sets.
- The unit also calculates an average reading based on the values of the latest 3 times measurement taken.

▶ To read the average value

- Press the "MEM" up button, the average value of the latest 3 times measurement taken of the current user will display with the average reading.

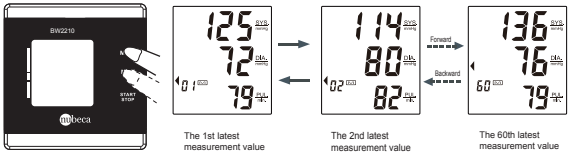


the average value of the latest 3 times measurement taken

Use the Memory Function

▶ To read the measurement value

- Press the "MEM" up button to display the set of measurement values.
- Press the "MEM" down button to display the next set of measurement values.



The 1st latest measurement value

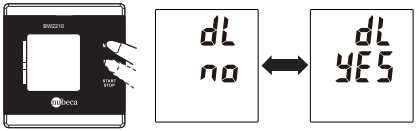
The 2nd latest measurement value

The 60th latest measurement value

Use the Memory Function

▶ To delete the memory value

- In the memory reading mode, press the "MEM" down button for 4-6 seconds, the unit will display " dL no ".
- Press the "MEM" up button and confirm " dL YES " or " dL no ".
- If you are sure all the data of corresponding user can be deleted, press the " START/STOP " button, all the corresponding user's data will be deleted and the unit will turn off.



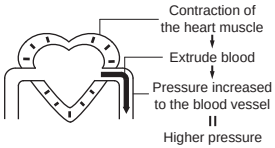
Note: If you have set " dL YES ", but do not press a button for 2 minutes, the unit will turn off automatically, but the corresponding user's blood pressure data will not be deleted. The delete operation must be confirmed by user.

After the measurement finished and when reading the memory values, the backlight is on about 10 seconds.

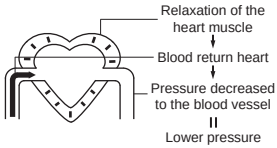
Blood Circulation

The blood circulation is responsible for supplying the body with oxygen.
blood pressure is the pressure exerted on the arteries.
The systolic blood pressure value (higher pressure or top value) represents the blood pressure produced by contraction of the heart muscle.
The diastolic blood pressure value (lower pressure or lower value) represents the blood pressure produced by relaxation of the heart muscle.

Systolic Blood Pressure

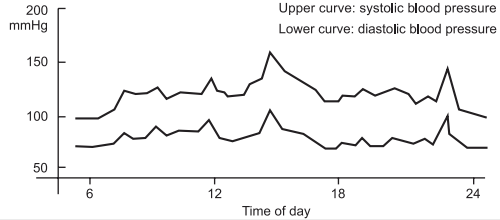


Diastolic Blood Pressure



Health and Blood Pressure

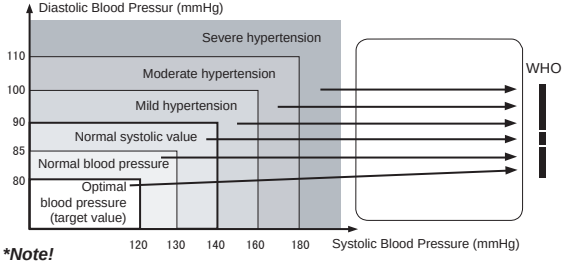
The incidence of hypertension increases with age. In addition, a lack of exercise, excess body fat and high levels of cholesterol (LDL), which sticks to the inside in blood vessels, reduces elasticity of these vessels. Hypertension accelerates arterial sclerosis which can lead to very serious conditions such as stroke and myocardial infarction. For these reasons it is very important to know whether the blood pressure is within a healthy range. Blood pressure fluctuates from minute to minute, throughout the day. Therefore it is essential to take regular measurements to help you identify an average blood pressure.



Classification of Blood Pressure

After each measurement is completed, the LCD display will show your position automatically on the six segments of the bar indicator which corresponds to World Health Organization (WHO) Blood Pressure Indicator.

Reference Material: Journal of Hypertension 1999, Vol 17 No.2



Note!

When a person's systolic and diastolic pressures fall into different categories, the higher category should apply.

Classification of Blood Pressure

Symptoms of High Blood Pressure

High blood pressure can go unnoticed for a long time, since it doesn't cause noticeable symptoms. The following are all possible causes of abnormally high blood pressure:

- Overweight;
- High cholesterol level;
- Smoking;
- Excessive alcohol consumption;
- Stress and emotional upset;
- Excessive consumption of salt;
- Lack of physical exercise;
- Genetic / hereditary predisposition;
- Underlying illnesses, such as kidney disorders or endocrine disturbance.

Treatment of High Blood Pressure

If your blood pressure reaches upper values of 140~160 mmHg and lower values of 90~95 mmHg in repeated measurements over several days, you should consult your doctor for detailed medical examination. You can assist the treatment prescribed by your doctor in the following ways:

- Loose weight and lower your cholesterol level;
- Reduce the consumption of alcohol;
- Reduce the intake of salt;
- Stop smoking;
- Take regular exercise;
- Monitor your blood pressure.

Exceptional Situations

Error Indicators

■ The following symbol will appear on the display when measuring abnormally.

Symbol	Cause	Correction
	The course of inflating appears error.	Wrap the cuff correctly and tightly.
		Inflate over again after ensuring.
	When measurement fails.	Do not move your arm and body, and keep quiet.
		Measure over again according to correct way.
	When the batteries power are too low.	Replace both of the worn batteries with two new ones.

Exceptional Situations

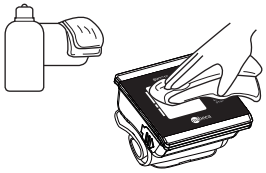
Eliminate Fault

Problem	Causes and Solutions
No power.	Replace both of the worn batteries with two new ones.
No display appears on the display screen.	Check the battery installation for proper placement of the batteries polarities.
Measurement values appear too high or too low.	Blood pressure varies constantly. Many factors including stress, time of day, how you wrap the cuff, may affect your blood pressure. Review the sections "Proper Way of Measurement" and "Take a Measurement".

Care and Maintenance

Care

- Keep the unit in the storage case when not in use.
- Clean the unit with a soft dry cloth. Do not use any abrasive or volatile cleaners.
- Never immerse the unit or any components in water.



⚠ Avoid subjecting the monitor to strong shocks or vibrations, such as dropping the nuit on the floor.

※ Use the unit consistent with the instructions provided in this manual. Use only authorized parts and accessories.

Care and Maintenance

Maintenance

• Do not clean the body and cuff with naphtha, thinner or gasoline etc.	• Do not wet the cuff or attempt to clean the cuff with water.
• Store the unit in a clean and dry location. Do not subject the unit to extreme hot or cold temperature, humidity and direct sunlight.	• Remove the batteries if the unit will not be used for 3 monthes or longer. Always replace both of the batteries with new ones at the same time.

Specifications

Model No.		BW2210
Display		LCD Digital Display
Measuring Principle		Oscillometric Method
Measurable Circumference of Wrist		13.5~21.5cm (5.3"~8.5")
Electric Shock Protection		Internal power supply appliance type B
Measurement Range	Pressure	0 to 299 mmHg (0~39.9 kPa)
	Pulse	40 to180 Pulses/min
Accuracy	Pressure	± 3 mmHg (0.4kPa)
	Pulse	± 5% of reading
LCD Indication	Pressure	3 Digits Display of mmHg or kPa
	Pulse	3 Digits Display
	Symbol	Memory/IHB/Heartbeat/Low Battery,etc.

Specifications

Inflation		Automatic by Internal Pump
Rapid Air Release		Automatic by Air Valve
Memory Function		60 Sets Measurement Values
Power Source		2 AAA Alkaline Batteries
Automatic Power-Off		In 2 Minutes
Dimensions		Approx. 78*80*34mm
Gross Weight		Approx. 140g (Batteries not included)
Operating Environment	Temperature	10 ~ 40 C (50 ~ 104 F)
	Humidity	15 ~ 90%RH (Noncondensing)
Transport and Storage Environment	Barometric Pressure	80~105 kPa
	Temperature	-20 ~ 60 C (-4 ~ 140 F)
	Humidity	10 ~ 95%RH (Noncondensing)

Statement

- The intended use: The unit is intended to be used by adults at home or medical centre to measure blood pressure and pulse rate.
- The unit satisfies the requirements of IEC60601-1 Medical electrical equipment, EN1060-1: Non-invasive sphygmomanometer, EN1060-3: Non-invasive sphygmomanometer,IEC80601-2-30: Medical electrical equipment.
- The unit has passed the EMC Test.
- Blood pressure measurements determined with this device are equivalent to those obtained by a trained observer using the cuff/stethoscope auscultatory method, within the limits prescribed by the American National Standard, Manual, electronic, or automated sphygmomanometers.
- The risk of patient and user can be lowered to acceptable level.
- Substitution of a cuff different from that supplied might result in measurement error.
- Please contact us if you need the circuit diagrams, component part lists etc.
- Specifications are subject to change without notice due to improvements in performance.

Warranty Information

- Federal law restricts this device to sale by or on the order of a physician.
- The unit, excluding the unit cuff, is guaranteed to be free of defects in workmanship and materials for a period of two years from the date listed on the purchase record, when used in accordance with the instructions provided with the unit.The unit cuff is warranted to be free from defects in materials and workmanship appearing within one year from the date listed on the purchase record when the unit is used in accordance with the instructions provided with the unit.
- For repair under this warranty.Our authorized service agent must be advised of the fault within the period of the warranty.This warranty covers parts and labor only under normal operations.A transportation fee or freight fee that may be incurred will be the owner's responsibility.Any defect resulting from natural causes, e.g.,flood,hurricane etc., is not within this guarantee.
  This guarantee does not cover damage incurred by use of the unit not in accordance with the instructions, accidental damage, or being tampered with or serviced by unauthorized service agents.
- Unit subjected to misuse, abuse, and neglect of these manual contents, non-instructional purposes;unauthorized repair or modifications will be excluded from this warranty. This guarantee specifically excludes expendables and consumables, for example batteries.All warranty claims must be directed to the distributor responsible for the sale of the device. The content of this warranty is subject to change without further notice.

Warranty Information

- Periodical check:
  Sensitive measuring devices must be checked from time to time for accuracy and leakage, we therefore recommend that the performance should be checked every 2 years and after maintenance and repair.
  Please contact the local distributor for details.
- Clean the cuff with a soft dry cloth.
- The unit satisfies the requirements of EN60601-1： Medical electrical equipment Part 1: General requirements for basic safety and essential performance; EN60601-1-2: Medical electrical equipment Part 1-2:General requirements for basic safety and essential performance – Collateral standard: Electromagnetic compatibility – Requirements and tests;
  EN1060-1:Non-invasive sphygmomanometers – Part 1: General requirements;
  EN1060-3: Non-invasive sphygmomanometers – Part 3: Supplementary requirements for electro-mechanical blood pressure measuring system.
  EN1060-4： Non-invasive sphygmomanometers – Part 4: Test procedures to determine the overall system accuracy of automated non-invasive sphygmomanometers.

Warranty Information

- Warning: Do not use luer lock connector in the construction of tubing. There Is a possibility that they might be inadvertently connected to intravascular fluid systems, allowing air to be pumped into a blood vessel.
- It can't be used while the wrist (arm) has bleeding or wound to avoid the blood flowing from the wound in pressurizing.
- It can't be used while the wrist (arm) has bleeding or wound to avoid the blood flowing from the wound in pressurizing.
- Applied parts contains cuff.
- The device， accessories and the packaging have to be disposed of waste correctly at the end of the usage. Please follow Local Ordinances or
- Regulations for disposal.
- Protection Class: Internally powered equipment
- Applied Part Type: Type B
- Moisture Protection: IPX0, continue operation
- WARNING: No modification of this equipment is allowed.
- Manufacturer will make available on request circuit diagrams, component part lists etc for the service personnel in parts repair.

Warranty Information

- Caution: this machine should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, this machine should be observed to verify normal operation in the configuration in which it will be used.
- *MEDICAL ELECTRICAL EQUIPMENT needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided in the ACCOMPANYING DOCUMENTS.
- *Portable and mobile RF communications equipment can affect MEDICAL ELECTRICAL EQUIPMENT.
- * Do not use a mobile phone or other devices that emit electromagnetic fields, near the unit. This may result in incorrect operation of the unit.
- Caution: This unit has been thoroughly tested and inspected to assure proper performance and operation!
- WARNING:
  The use of ACCESSORIES, transducers and cables other than those specified, with the exception of transducers and cables sold by the MANUFACTURER of the COMPRESSOR NEBULIZER as replacement parts for internal components, may result in increased EMISSIONS or decreased IMMUNITY of the ME EQUIPMENT or ME SYSTEM.

Warranty Information

- **Guidance and manufacture's declaration**

Guidance and manufacture's declaration – electromagnetic emission		
The Digital Blood Pressure Monitor is intended for use in the electromagnetic environment specified below. The customer of the user of the Digital Blood Pressure Monitor should assure that it is used in such an environment.		
Emission test	**Compliance**	**Electromagnetic environment – guidance**
RF emissions CISPR 11	Group 1	The Digital Blood Pressure Monitor use RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emission CISPR 11	Class B	The Digital Blood Pressure Monitor is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Not applicable	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Not applicable	

Guidance and manufacture's declaration – electromagnetic immunity			
The Digital Blood Pressure Monitor is intended for use in the electromagnetic environment specified below. The customer or the user of Digital Blood Pressure Monitor should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floor are covered with synthetic material, the relative humidity should be at least 30%.
Power frequency (50Hz/60Hz) magnetic field IEC 61000-4-8	3A/m	3A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE UT is the a.c. mains voltage prior to application of the test level.			

Guidance and manufacture's declaration – electromagnetic immunity			
The Digital Blood Pressure Monitor is intended for use in the electromagnetic environment specified below. The customer or the user of Digital Blood Pressure Monitor should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Radiated RF IEC 61000-4-3	3A/m 80 MHz to 2.5 GHz	3A/m	Portable and mobile RF communications equipment should be used no closer to any part of the Digital Blood Pressure Monitor, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d = 1.167\sqrt{P}$ 80 MHz to 800 MHz $d = 2.333\sqrt{P}$ 800 MHz to 2.5 GHz Where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site

Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Radiated RF IEC 61000-4-3	3A/m 80 MHz to 2.5 GHz	3A/m	survey,a should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol:
NOTE 1 At 80 MHz and 800 MHz, the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			
Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the Digital Blood Pressure Monitor is used exceeds the applicable RF compliance level above, the Digital Blood Pressure Monitor should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the Digital Blood Pressure Monitor.			

Recommended separation distances between portable and mobile RF communications equipment and the Digital Blood Pressure Monitor.		
Pressure Monitor is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the Digital Blood Pressure Monitor can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the Digital Blood Pressure Monitor as recommended below, according to the maximum output power of the communications equipment.		
output power of transmitter	**Separation distance according to frequency of transmitter (m)**	
	80 MHz to 800 MHz $d = 1.167\sqrt{P}$	80 MHz to 800 MHz $d = 2.333\sqrt{P}$
0.01	0.117	0.233
0.1	0.369	0.738
1	1.167	2.333
10	3.689	7.379
100	11.667	23.333
For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.		